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Eighth day of December 2004

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## **PROVISIONAL SPECIFICATION**

**Invention Title:        System and method for selecting a service provider**

**The invention is described in the following statement:**

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## SYSTEM AND METHOD FOR SELECTING A SERVICE PROVIDER

### Field of the invention

The present invention relates to a system and method for allowing a service user to quantify and compare the desirability of competing service providers, and to select a service provider to perform a particular service.

### Background of the invention

Potential purchasers of goods are often able to choose the product most appropriate to their needs by examining the product and assessing the quality of its construction and its suitability to the purchaser's needs. Usually, the price of the goods is known and therefore the purchaser may be able to base their purchase decision on a cost/benefit analysis of the product.

In contrast to goods, potential users of a service generally do not have the same level of information available to them on which to base their selection of a service provider. Therefore the process of ascertaining which service provider is the most appropriate, efficient and/or cost effective provider to perform a job can be a complex, time consuming and inexact process.

Traditionally services have been procured using a tendering process. Participating service providers prepare a proposal in response to a tender request made by the service user. The service user can then compare the proposals and select the most desirable service provider.

As the need for the service user to perform research into the potential service providers is reduced, the service users perceive that there is a time and cost advantage to them in using a tender system. However, the perceived advantages of a tender system may not be borne out in actuality for a number of reasons. For example, the tender documents from all of the potential suppliers may not be readily comparable due to different terminology, methodology or charging practices of the suppliers, and hence additional effort is required to perform the comparison between the various tender responses received. Furthermore, in situations where a service user (or group of service users) have a large number of low cost jobs to be performed, the time and effort expended in compiling, reviewing and comparing tenders may make using a tendering process both slow and uneconomical for both buyers and sellers.

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In particular, a tendering system may also become disadvantageous for the suppliers when the cost and effort required to submit a tender for a job outweighs the profit of performing the job.

5 In order to address the identified disadvantages of prior art service procurement methods, International patent application PCT/AU01/00660 to the applicant proposes a system and method for facilitating the selection of a service provider to perform a job. The system described therein uses the current rates charged by each service provider to estimate a cost effectiveness ranking for each service provider and allows the buyer to select a service provider based on this information.

10 PCT/AU03/00636 also to the applicant (the contents of which are herein incorporated by reference), proposes a system and method for facilitating the selection of a service provider to perform a job that uses the historical costs charged by each service provider to rank service providers by historical cost and uses historical qualitative assessments of the performance of each service provider to rank service providers by quality, and allowing the buyer to select a service provider based on this information.

## 15 Summary of the Invention

It has been found by the present inventors that the system disclosed in PCT/AU03/00636 has a number of disadvantages in certain circumstances. The comparison of the service providers on the basis of their actual historical cost and quality is only effective if the previous services provided are similar to the current job being allocated. In some circumstances, it is difficult to  
20 meaningfully compare jobs and accurately filter out dissimilar work from the historical data. It has been discovered that, in this instance, comparison of service providers should not solely be made by reference to their past performance on cost and quality of service using absolute measures such as total price per job, or per service element, but rather comparisons between service provides can effectively be made, wholly or in part, by assessing how well they have  
25 historically performed when measured against expectations. For example, if a buyer wishes to allocate an investigation job to a service provider and the job does not include surveillance as an element, but all of the historical data available relates to surveillance investigations, a comparison of service providers can still be made by comparing the actual historical costs of each provider to the expected historical cost for each provider to derive comparable performance differential data

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for each provider. In this case a first service provider may on average be 10% cheaper than expectations and another may be 5% more expensive than expectations. Thus by measuring the historical outcomes vs. expectations the pool of historical performance data able to be called upon to compare service providers is broadened as it is no longer constrained by the type of jobs performed in the past. Thus, in the illustrative example, using historical performance differential data allows more suppliers to be considered for a job, even those who have only performed surveillance investigation jobs in the past.

As noted above by using a value that is compared to an expectation for allocating a job, dissimilar jobs performed by different service providers can be compared. For example, if a first service provider continually performs short term jobs with an average duration of one week and average cost of \$1000, and another service provider typically performs jobs spanning a number of months and costing tens of thousands of dollars, the performance of these two service providers can not readily be compared in absolute terms, however they can be compared based on how well they have met the expectation of their buyers.

Thus, in a preferred embodiment the present invention provides a method (and system) which can be used by an individual or organisation wishing to select a supplier from a group of suppliers to perform a service, with or without the provision of associated goods. The preferred embodiment of the present invention provides a method and system for achieving an efficient marketplace between a group of sellers and at least one buyer, where the buyer or buyers repeatedly purchase products or services from the sellers.

In broad concept the present invention provides a method of selecting a service provider to perform a particular service based on historical performance differential data. The performance differential data is preferably derived from the service provider's actual performance and a performance expectation. A service provider's performance can be compared in respect of one or more of service criteria indicative of service provider performance in respect of a particular facet of a service.

The present invention is based on the insight that an efficient marketplace can be encouraged if suppliers of services and/or goods know that their future work-flow is determined by a systematic comparison of how well they have met expectations in terms of both costs and

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quality in the past. Thus the present system and method encourages sellers of goods and/or services to provide a high quality of products and services within expected parameters in order to increase their likelihood of obtaining business in the future. Suppliers are also encouraged to make realistic estimations of costs, directions and other job parameters and to take all foreseeable factors into account when setting expectations.

According to a first aspect of the present invention the present invention provides a computerised method of enabling the selection of a service provider for performing a service; said method including:

- (a) processing a service enquiry for a particular service;
- 10 (b) retrieving historical performance differential data associated with said service in respect of a plurality of service providers in response to said service enquiry;
- (c) processing said historical performance differential data, to arrive at comparable performance differential data in respect of said plurality of service providers for enabling the selection of a service provider to perform the particular service;
- 15 (d) capturing performance differential data relating to the provision of the particular service by the selected service provider, and
- (e) updating the historical performance differential data by incorporating said captured performance differential data.

The method can include repeating steps (a) to (e) to enable the selection of a service provider for the provision of subsequent services with the aid of updated performance differential data.

The method preferably includes compiling a performance differential dataset including historical performance differential data components associated with the provision of at least one previous service by each service provider.

25 The method can further include defining at least one performance expectation for the performance of the service, and monitoring this against actual performance.

Preferably the performance differential data includes data derived from both performance expectation data and actual performance data.

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The method preferably includes processing said captured actual performance data and said performance expectation data to generate data indicative of the differential between the actual performance of past services and a corresponding performance expectation; and

5 updating the historical performance differential data by incorporating said processed differential performance data.

In an embodiment the method preferably includes retrieving historical performance data relating to the actual performance of past jobs and associated performance expectation data for the past jobs in respect of a plurality of service providers in response to said service enquiry;

10 processing said data related to the actual performance of past jobs and corresponding performance expectation data to generate data indicative of the differential between the actual performance of past services and a corresponding performance expectation.

15 Preferably the historical performance differential data includes performance data relating to at least one of the following: the cost of past services, the quality of past services, with the quality of past services including the timeliness of the provision of past services, the duration of past services, and the outcome of the past services.

20 The comparable performance differential data in respect of each of the service providers can be combined with least one of comparable cost data, and comparable quality data, to derive a comparable performance index for each service provider for enabling the selection of a service provider to perform the particular service, with the combination of the comparable cost data and comparable quality data and comparable performance differential data being arranged in accordance with weightings reflecting the relative importance of the comparable cost data, comparable quality data and comparable performance differential data to the buyer.

At least one performance expectation for the performance the service can be set at least in part by one or more of the following: a buyer, a chosen service provider, a third party.

25 The method can include: enabling at least one performance expectation for the service to be varied; and capturing as historical performance differential data, data relating to a variation in the at least one performance expectation for the service.

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The method can also include enabling a procurer of the service to approve or deny variation to a performance expectation. Preferably the procurer can deny variation to a performance expectation if the variation was foreseeable when an initial performance expectation was set. Performance differential data can preferably be measured relative to a combination of the  
5 initial performance expectation value and one or more subsequent incremental changes to the performance expectation that were not foreseeable when the initial performance expectation was set.

In the method, setting the at least one performance expectation for the performance the service can preferably include:

10 receiving a service plan from a chosen service provider, and  
setting the setting the at least one performance expectation for the performance of the service in accordance with the service plan if a procurer approves the service plan. The method can additionally include, enabling the procurer to amend the service plan.

In a second aspect the present invention provides a computerised method of enabling the  
15 selection of a service provider for performing a service, said method including:

(a) compiling historical actual performance data and corresponding performance expectation data associated with the provision of at least one previous service by a plurality of service providers.

(b) processing said actual performance data and performance expectation data to  
20 arrive at comparable performance differential data in respect of said service providers for enabling the selection of a service provider to perform the particular service;

(c) capturing actual performance data and performance expectation data relating to the provision of the particular service by the selected service provider; and

(d) updating the historical actual performance data and performance expectation data  
25 to incorporate said captured actual performance data and performance expectation data.

The method preferably includes setting an initial performance expectation. The method can also include enabling variation of the performance expectation during the performance of the



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job. Variation of the performance expectation during the performance is preferably possible when the variation was not foreseeable when the initial performance expectation was set.

Preferably the performance expectation data used to arrive at comparable performance differential data is derived from the initial performance expectation and one or more subsequent non-foreseeable variations to the performance expectation data.

In a third aspect the present invention provides a computer system to enable a buyer to select a service provider for performing a service, said system including:

an enquiry processing device configured to receive and process a service enquiry for a particular service from the buyer ;

10 a database configured to store historical performance differential data associated with said service in respect of a plurality of service providers;

a processor carrying instructions to retrieve and process said historical performance differential data from said database in response to said query to arrive at comparable performance differential data in respect of said service providers for enabling the buyer to select a service provider, on the basis of said comparable performance differential data, to perform the particular service.

15 The computer system preferably includes a data capture component configured to capture actual performance data, and performance expectation data, relating to the provision of the particular service by the selected service provider, and updating means to update the historical performance differential data on the database with said captured performance data.

20 The computer system preferably includes an expectation variation component configured to enable variation of performance expectation data associated with a service.

25 The processor is preferably configured to derive a comparable performance index for each service provider by combining the comparable performance differential data, comparable cost data and comparable quality data in respect of each of the service providers, with the combination of the comparable performance differential data, the comparable cost data and comparable quality data being is performed in accordance with weightings reflecting the relative importance of the

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comparable performance differential data, the comparable cost data and comparable quality data to the buyer.

The data capture component can be configured to capture varied performance expectation data relating to the provision of the particular service by the selected service provider.

5 In a further aspect the present invention also provides computer-readable medium having stored thereon executable instructions for causing a computer to perform a method as described herein. The present invention also provides a computer operating under the control of the abovementioned computer readable medium.

10 In the specification and claims the term "services" should be understood to extend to services that include the provision of associated goods or spare parts as a sub-component of the service.

15 It will be understood that the invention disclosed and defined herein extends to all alternative combinations of two or more of the individual features mentioned or evident from the text or drawings. All of these different combinations constitute various alternative aspects of the invention.

#### Brief description of the drawings

Notwithstanding any other forms which may fall within the scope of the present invention, preferred forms of the invention will now be described, by way of example only, with reference to the accompanying drawings in which:

20 Figure 1 shows a flow-chart illustrating an overview of method according to a first embodiment of the present invention;

Figure 2A shows a flowchart representing the operation of the method according to the embodiment of Figure 1 which allows measurement of service provider performance against expectations;

25 Figure 2B shows the sub-process used for setting expectation values in the process of Figure 2A;

Figure 2C shows the sub-process used for varying expectations once a job has begun,

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Figure 3 shows an exemplary spreadsheet including a set of historical performance differential data for three service providers, and the results of a series of intermediate processing steps used performance differential data to derive comparable performance indicators for each of the service providers.

#### 5 Detailed description of the embodiments

The preferred embodiment may advantageously be applied to situations where a high number of transactions between the buyer and the sellers occur, thus providing a large amount of historical data on which to base predictions of performance differentials for the service providers. However the present invention should not be construed to be limited to a market of this type.

10 Preferably in using the system and method as described the service providers are aware that their performance will be compared with that of other service providers, thereby fostering competition within the marketplace. Accordingly the system and method described may provide means for trading in services of relatively low value which has the benefits of a tender system without requiring service providers to tender on a job-by-job basis.

15 The system described in PCT/AU03/00636 is particularly suited for selecting services and/or goods supplied with an associated service, which can be readily broken down into a number of identifiable and comparable service components or elements. Typically service elements will be tasks or features of the service for which service providers can allocate a discrete fee, and which the procurer of the service can readily use to define the scope or quality of the  
20 service desired. However as will be appreciated certain types of complex jobs are not able to be readily broken down into discrete components. Such jobs may be allocated to service providers using the preferred embodiments of the present invention by defining a single element for the job that represents the performance of the complex task, eg. providing a course of physiotherapy treatment to an injured person can be grouped together into a single element of a job where in fact  
25 physiotherapy includes the performance of many different tasks such as massage, exercise consultations etc.

In the preferred embodiment of the present invention jobs may be allocated by a buyer on the basis of historical performance differential data that includes expectation data or benchmark data against which the performance of a service provider has been measured. In this embodiment

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the outcome/cost/service level in respect of each job performed by a service provider is compared to an expectation value that has been set prior to the performance of the job (and possibly varied during the job) and the deviation from, or level of compliance to, the expected values are used to allocate future work in much the same way as historical cost was used in the previous example.

5 In the present example the performance differential data is expressed in terms of the deviation between the expected performance and actual performance with the results being displayed as numbers, eg. cost variations are displayed as the variation between actual and expected costs, represented in dollar terms. Clearly the differential data can be expressed in a number of ways, eg, actual performance as a percentage of expected performance, expected  
10 performance as a percentage of actual performance or the differential value expressed as a percentage or fraction of either the actual performance or estimated performance. Other statistical measures may also be used.

The present example is to be described in relation to the provision of rehabilitation service to a patient. However it should be understood that its example is non-limiting and that the method  
15 described herein can be applied to the selection suppliers of any service, with or without the provision of associated goods, and should not be construed as being limited to application to the provision of rehabilitation services.

Figure 1A shows a flowchart depicting an overview of the process for using performance differential from expectations to compare service providers.

20 The process 800 begins at 802 by the input of a service request by the buyer. The service request defines the type of service that the buyer wants performed.

In the next step 804, the buyer is given the opportunity to apply one or more filtering criteria to the claim details in order to narrow the full list of potential service providers who can perform the requested job down to a group of providers who will be compared on their historical  
25 performance. The filtering information chosen by the buyer may also be used to narrow down the number items, or type, of historical data which can be used for the comparison of service providers.

The performance criteria describing the services can include attributes relating, inter alia, to:

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- the nature of the services;
- specific attributes of the services; and
- the quality or type of equipment and/or resources required to perform a service;
- the qualifications or association memberships desired by people performing a service;

5 and

- other attributes of the service provider performing the job, which can affect the kind, quality or style of service performed, such as the length of time the supplier has been in business etc.

10 For example, when allocating a rehabilitation job to a rehabilitation service provider, one of the questions that may be asked is "What is the type of injury?". If this is deemed by the buyer to be an important filtering question, then only service providers having historical data related to injuries of the same type will be considered as potential service providers in respect of the current job.

15 In a further embodiment the filtering can be applied according to a predetermined set of criteria. For example a buyer can select a provider from a predefined panel. For example, an insurer allocating rehabilitation jobs can specify a list of panel members that may be used in certain circumstances, e.g. the buyer may have a predefined panel who can perform jobs for certain clients, or in certain geographical areas etc. This predefined filtering will typically be performed in combination with the case-by-case filtering described above, however it may also be  
20 performed without any case-specific filtering.

In the next step 806 the buyer is presented with a list of one or more potential service providers and a comparable performance differential indicator of their performance in respect of previous jobs.

25 In step 806 the comparable performance criteria is generated from historical performance differential data as will be described in connection with figure 3. Rather than relying solely on absolute measures such as the cost of previous jobs or the quality of the service provided in previous jobs as the prior art has, the comparable data for each service provider is derived from measures representing whether in past jobs each of the potential service providers have met

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expectations. In relation to a rehabilitation job, expectations may be comprised of a "Return to work goal" ie. whether the patient will return to the same job with the same employer, or a different job with the same employer or the like. Expected costs and expected duration of previous jobs may also be important expectation criteria for allocating a job.

5        Next at 808 and 810 after a service provider is selected in step 806 the more detailed information relating to the job to be performed is uploaded 808 and any additional data to be measured is specified 810. and sent to the service provider chosen in step 806. Step 810 can be viewed as setting a preliminary set of performance expectations for the job, which may later be refined into an agreed set of performance expectations as described below in connection with  
10        figure 9A. The job is then handed over to the service provider at 812 for completion.

      In figure 2A depicts the sub-process for setting and varying performance expectations and storing expectation data as historical data. In an initial step 902, the job is allocated to a service provider and all relevant documentation is provided to the service provider to enable the job to be performed. In the next step 904, the expectations for the performance of the job are set. The  
15        expectations can be set by any combination of the buyer, the service provider, or one or more third parties. For example in relation to a rehabilitation job, the opinion of an independent doctor may be used when setting expectations, or the employer of the person being rehabilitated may also have a say in setting the expectation level. Historical data gathered over the performance of previous similar jobs may also be used to set the current expectation level in step 904.

20        It may be discovered, during the conduct of a job, that the performance expectations set in step 904 are not going to be met. This may occur because the service provider is not performing up to the expected standard or the performance expectations are inappropriate. If it is found that the performance expectations are inappropriate it may be necessary to revise or vary the expectations to allow accurate performance appraisal of the service provider to be performed. A  
25        facility for varying performance expectations set at 904 is provided in step 906. If the change in expectations is deemed to be acceptable and are to be changed, the process loops back to expectation setting stage 904 and the job continues. If expectations are not changed, the job is completed at step 908. As will be appreciated the performance expectations in respect of a job may need to be varied more than once during the performance of a job.

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Throughout the whole allocation process, the performance of the job, and after the completion of the job data that is generated can be stored as historical data in a database 910. The stored historical data can include data representing the expectation levels set, and any variations thereto as well as any information regarding the circumstances surrounding the variation in expectation levels which may be relevant to rating a particular service provider in the future. The actual performance data relating to the provision of a job can also be stored. Other historical data which can advantageously be stored will readily become apparent to those skilled in the art upon reading the more detailed description of the process which follows and by reference to the description and figures of PCT/AU03/00636, and in particular the database schema depicted in Figures 7A to 7E thereof.

Figure 2B shows a more detailed view of the sub-process 904 for setting initial expectations. In an initial step 904A a service plan is prepared. The service plan may be prepared by the service provider, the buyer or a third party. As will be appreciated rehabilitation and other complex tasks may not readily be able to be broken in to service elements as described in relation to the previous embodiments of the present invention, and may require significant review or research by the selected service provider to enable an initial expectation level to be proposed. Thus, it will typically be necessary for either the service provider (or another person familiar with the job requirements) to provide a plan or proposal for the provision of service in order to allow a set of one or more performance expectations to be discussed and agreed upon by the service provider and buyer.

In the next step 904B the service plan can be amended. Typically the buyer reviews the service plan and is able to either accept the service plan, suggest amendments or refer it back to the service provider for amendment. At any stage in this setting of expectation, third parties may be asked for advice in order for the service provider and the buyer to come to agreement on a service plan in which both of them are confident is reasonably attainable. Once the expectations are set and agreed to by the buyer, an Expectation Marker is set in step 904C.

In certain embodiments a certainty rating can be given to an expectation that is set. This can later be used to weight the performance differential data values to account for this uncertainty.

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Now that the expectation has been set, the service provider can begin to provide the service or perform the job with the understanding exactly as to what standard their performance will be judged against and that this comparison against the expectations will be used to allocate the future work.

- 5 During the conduct of the job it may become necessary for the expectations to be changed to take into account a new situation. For example in rehabilitation work, a patient may not be progressing as required for a wide range of reasons. For example a worker's injury may be found to be more debilitating than initial assessments indicated, or the worker may fail to comply with recommended medical treatments. Such factors may change the expected duration and cost of the
- 10 rehabilitation process through no fault of the provider. In such a situation the service provider will be unable to meet the expectation, and thus without some means for adjusting expectations, they would be unfairly disadvantaged in the allocation of future work because they have not met expectations. In other cases, a service provider might request adjustments to the time and cost estimates to account for a contingency that the case manager feels could reasonably have been
- 15 foreseen when the initial rehabilitation plan was drawn up. In such instances, even though the additional treatment might be approved, measuring the final outcomes against the revised expectations would not reflect this concern. The process described in figure 2C shows how changes in expectations can be managed.

- The process for changing expectations 906 begins at the stage of setting and date stamping
- 20 expectations 906A. If during the performance of the job expectations change 906B the buyer or the service provider may approach the other party to vary expectations. If the expectations have not truly changed, then the answer to the question "Expectations changed?" is "No" and the expectations remain unchanged 906E and the service providers performance differential is judged against the previously approved performance expectations.

- 25 If on the other hand, if expectations have truly changed, the process moves to step 906C in which the question is asked "Are the changes reasonable?"

As will be appreciated, a change in expectations will usually be initiated by the service provider and accordingly the question of whether changes are reasonable will typically be determined by the buyer. For example, it may be reasonable to expect that an additional two



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weeks is needed to fully rehabilitate the patient if the current treatment is less effective than expected. In such a case, the change in expectations is reasonable. If a change is deemed not to be reasonable in step 906, expectations remain unchanged 906E and the job continues as previously indicated and the service providers performance differential is judged against the previously approved performance expectations.

If the changes are deemed to be reasonable at 906C the next question to be asked is "Were the changes foreseeable?" at 906D. In either case as the changes have been deemed to be reasonable, the additional time or charges or other changing situation will be approved by the buyer. This typically means that the service buyer will not refuse to accept the additional charges or job duration or the fact that some other performance criterion cannot be met. However the service provider will not be given the advantage of having their performance compared to an updated performance expectation as will be seen below.

If during the course of a job the service provider realises that the job is more difficult than first believed and that they cannot meet one or more of the performance expectations they may request a variation of the expectations. If it is found that the reason the job was underestimated in the first place was because the service provider has failed to take into account some relevant and known factor when assessing job then the change is deemed to be foreseeable. On the other hand, if the service provider providing rehabilitation to a patient receives a new medical report indicating that the patient's condition is more serious than originally believed, a change in expectations may be deemed to be unforeseeable as the change is the result of previously unknown information.

As indicated at 906E and 906F these two situations are handled differently. In a case with an unforeseeable situation causes expectations to be varied, then the expectation marker, that is used to set the current expectation level is moved so that the newly set performance expectation is the current valid expectation. In the case with a foreseeable variation of the expectations is requested then the expectation marker is not changed. In this case the most recent performance expectation having an expectation marker is used to assess the performance of the service provider rather than the newly requested expectation. As described in connection with figure 3 below jobs carrying an expectation marker value of "1" in the "Marker" field have a valid

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expectation marker set corresponding to that entry, whereas an expectation marker value of "0" in the "Marker" indicates that the expectation marker is set at another expectation for that job.

As will be appreciated by those skilled in the art for any given job more than one change to expectations may be necessary. In this situation it is possible for the service provider to be  
5 judged against a combination of their original expectation and any accepted and unforeseeable changes of expectation which occurred during the conduct of the job. For example, if a job is originally expected to cost \$3,000 and due to circumstances arising the service provider then believes the job will cost \$3,400 the service provider may request the expectation to be changed by the buyer. However if the buyer thinks that this change in expectation was foreseeable, the  
10 expectation marker is unchanged and the performance of the service provider will still be measured against the initial expectation of \$3,000. If a subsequent change of expectations occurs and the job becomes more complicated and the service provider then believes that the job will cost \$3,900 which represents a further increase of \$500. If the buyer agrees that the second change was not foreseeable and that the additional \$500 expense is reasonable, the expectations  
15 can be upgraded to account for this incremental increase in expectations. Thus, the expectation increases by \$500 from \$3,000 to \$3,500 in this case the expectation marker is set at the newly approved and unforeseeable expectations. Thus in this case the service provider's cost performance will be compared to a value of \$3500 (original cost + extra reasonable, unforeseen cost), rather than to the total cost \$3,900 that the service provider has been requested.

20 It should be noted that some types of expectations (e.g. whether an outcome has been met) are not incremental (like cost) but binary, that is, they are either achieved or they are not achieved. In this instance the performance expectations are governed by the position of the expectation marker rather than being the sum of the original expectations and the subsequent unforeseen expectation adjustments.

25 In all steps of the process 906, the expectations and the situation surrounding changes and whether the changes are foreseeable and reasonable as well as the outcomes of the job are stored as historical data in the historical data database 910.

As described above the expectation data collected in this way and updated in accordance with this method can be used to obtain reasonable expectations value against which the service

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provider's performance can be compared. An allocation algorithm similar to that described in PCT/AU03/00636 can be used to derive comparable performance differential data for each service provider to enable a service provider to select the best service provider to perform the next job.

5 Figure 3 shows part of a dataset 200 containing historical data for three service providers 201, 202 and 203. Rows of data labelled with the same transaction number in column 205, eg 204, represent data relating to a single job requested by a buyer, and performed by the company.

The dataset 200 consists of nine columns of data 205 to 280 as will be described below. The columns of data contain the following data classes.

10 **Column 210 "Data Supplier"**

Column 210 include data signifying which service provider performed a particular job. As will be appreciated the data in the table 200 is sorted according to data supplier, accordingly the first 10 rows of data all correspond to the historical performance of supplier number 1, and subsequent 10 rows of data correspond to supplier number 2 and so on for supplier number 3.

15 **Column 205 "Transaction"**

Column 205 contains a transaction number which is associated with each row of data in the data table 200. As will be noted more than one row can contain the same transaction number. The occurrence of more than one row having the same transaction column indicates that there has been a variation to the performance expectations used in the transaction.

20 **Column 220 "Marker"**

25 The expectation marker column includes an expectation marker which can take the value of either "0" or "1" to indicate where a performance expectation marker has been set for the particular transaction. The presence of value "0" in the marker cell indicates that the corresponding row does not contain a valid performance expectation value. The presence of data value "1" in the marker column indicates that the performance expectation corresponds to that row containing the marker that is valid for a particular transaction. The presence of a "0" in the marker column can indicate either that a variation has been made to the performance expectation for the transaction and that the row is no longer the current expectation, or that a change to the

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performance expectation for the transaction was requested and rejected as being foreseeable (or otherwise not allowable) by the buyer. Using rows 204 relating to transaction number 1 as an example, the presence of 0 in cell 204.1 indicates that an old performance expectation value has existed and that this has been revised. The next cell in the column 204.2 contains the value 1 which indicates that the change has been applied to a previous performance expectation value and that it is now the accepted current performance expectation value for the transaction.

Transaction number 3 has data contained in the group of rows 206. In the marker column 220 the series of values 010 is entered. The initial two values 0 and 1 denote that the same situation has occurred as for transaction 1, that is an original performance expectation value has been superseded and replaced by a new, and currently valid performance expectation value. The presence of the following 0 (item 206.3) in the marker column 220 indicates that a subsequent request for variation of the performance expectation value has been made but that has been rejected. Thus in the situation the current performance expectation value which is valid is the row indicated by the reference numeral 1. As will be noted the subsequent columns in the table do not contain performance differential values in rows in which the marker value is set to 0 as these rows of the dataset 200 do not correspond to a valid performance expectation. In a preferred implementation of the system, this data will be stored in the historical database, however, it will not be used in the analysis of the performance of the suppliers.

It is also possible that more than one expectations marker can be set for a particular transaction. The additional expectations markers indicate a benchmark expectation that can be used for a specific purpose, e.g. by an auditor or the like. For example a buyer may choose to change their policy concerning what changes are acceptable or considered foreseeable. Under the new policy regime the correct expectation marker position may differ from the position of the expectation markers set under the old policy. By retroactively setting additional expectation markers for past jobs according to the new policy the future work can be allocated according to the new policy by comparing actual performance against the second set of expectation markers.

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**Columns 230, 240, 250, 260, 270, 280 "Performance Differential Value Columns"**

The columns 230 – 280 contain data which represents the differential between the service providers actual performance in respect of a particular job and the performance expectation, for a range of service criteria. In the present example there are two costs differential columns 230 and 240, a duration differential column 250, an outcome differential column 260 and two service standards differential columns 270 and 280.

As will be appreciated by those skilled in the art performance differentials can be expressed in a variety of different ways depending upon the nature of the performance criterion being measured. For example, costs differentials 230, 240 are represented as a monetary values representing the difference between the actual costs and the expected cost for either the whole or part of a job that has been performed. Duration differential is represented as a number of days, over or under the expected time for the past job. The outcome differential represents the deviation from expected outcome that occurred in respect of a particular job. This is a binary value indicating that the outcome has been achieved "1" or not achieved "0".

The service standard performance differential will typically represent the deviation from desired performance standards or protocol for previously performed jobs. The service standards values will typically be recorded on a subjective basis by the buyer in respect of each service, e.g. as a percentage value. In the present example a rating less than 50% is below expectation and a rating above 50% indicates that the provider has performed above expectations.

As will be appreciated many methods of calculating comparable performance differential data for suppliers can be devised, such as single or multiple regression. In the present example a process of determining each service providers percentage deviation from the average performance differential (in respect of each performance criterion) is used, this is further processed to derive a single comparable performance differential value (500).

Data in table 300 represents a combined performance differential for each service provider in respect of each performance criteria. The value provided for each service provider in respect of each service criterion represents an average differential between their actual performance and their expected performance for all past jobs. A higher value indicates that the performance was

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above expectation, i.e. more expensive in term of cost, or longer in terms of duration, or above expected standards in terms of outcome or service level. Whereas a lower value indicates below expected performance in each of these criterion.

Row 301 of table 300 represents the average performance differential for each performance criterion across the three service providers, eg. the average cost differential for "cost 1" for all service providers is \$481.80.

The differential of each service provider can then be represented as a percentage of this average differential figure. This data is shown in table 310.

In the next table 320 the percentage differentials are converted to a positive integer by subtracting the lowest percentage average value (for the corresponding criterion) from the percentage value for each service provider. Thus in each criterion the lowest value will always be 0.

The value assigned to each criterion in table 330 represents whether the calculated values for the criterion represent increased desirability with increased numerical value, or decreased desirability with increased numerical value. Values that increase with increased desirability are labelled as "natural" whereas values that decrease with increased desirability are labelled as "goofy".

In the next table 340 all "goofy" values are flipped so as to become "natural" values to allow more intuitive comparison by the service buyers.

These final supplier differential ratings 340 can be used "as is" or normalised to a value between 0 and 100. Normalised values for the data are contained in table 350.

By selecting "No" in the Norm box 405 the non normalised data in table 340 is used to generate the weighted performance criterion contained in table 402. These values are generated by multiplying the values in table 340 by the corresponding weighting stored in weightings table 401. It will be noted that each of the performance criteria has been weighted with a value of 1 which indicates that they are all equally as important as each other, to the buyer. Clearly these weightings can deviate from 1 to indicate a greater or lesser importance level.

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In the next block of data 403 a further set of weightings are represented. This second set of weightings 403 are used when combining the final cost, duration, outcome and service stand performance differentials into a single comparable performance differential measure for each service provider. In the next block of data 410 the performance differentials for the two cost components are combined into a single cost differential value. As there is only a single duration and outcome, no combination of these values is needed and the data shown in data group 402 simply migrates into data group 420 without change. As with cost there are two service standard components which are combined into a single service standard performance differential value. As can be seen when judged on costs, supplier 1 is the most favourable, but when judged on duration and service standards, supplier 2 is superior.

The final data block 500 shows an overall performance differential rating for each service provider. The performance differential value for each performance differential criteria is combined according to the weightings in data block 403 in order to generate the data 500. As can be seen supplier 2 has an overall rating of 85% making it the most favourable supplier to perform this job.

The number of past jobs which are included in the dataset may be varied to tailor the system to a particular application. For example, in some industries where price fluctuates quickly it may be necessary to only use a small sample of past jobs for determining cost effectiveness. Certain jobs or sales may even be removed from the sample set used, say the two most expensive and two least expensive jobs, or all jobs falling outside two standard deviations from the average.

It should be noted that a comparable desirability index can be generated by combining (possibly in a weighted fashion) the comparable performance differential measure described above for each service provider with cost effectiveness and/or quality rating of the type described in PCT/AU00/00636.

As described in PCT/AU03/00636 the buyer of a service can specify relative weightings for each of the performance criteria or detail of a job if they wish to be presented with a comparable estimate for each of the service providers that accounts for their preferences.

In the preferred embodiment the comparable performance indicator 500 (and/or optionally some portion of the data generated, or used, in the derivation of the comparable performance

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criterion) for each service provider will be provided to the buyer to allow him or her to select a service provider. The data will typically be presented by way of graphical user interface on a computer display. The computer displaying the results to the user can be configured to allow a user to display the results for a plurality of service providers simultaneously, or only one the  
5 service provider at a time.

In addition comparative performance data may also be transmitted to each of the service providers. Typically the transmitted data will take the form of providing a set of rankings or a subset of the stored historical cost, quality and/or performance expectation data for all possible (or a subset) of service providers to each service provider with all data, such as names, identifying  
10 the other service providers being hidden or removed. In this way individual service providers can view their relative ranking, or other data, without necessarily knowing the identities of their competitors. Such reporting to service providers can foster competition in the marketplace by showing each service providers what level of service, or cost of service, needs to be provided in order to increase their chance of winning more work.

It would be appreciated by a person skilled in the art that numerous variations and/or  
15 modifications may be made to the present invention as shown in the specific embodiments without departing from the spirit or scope of the invention as broadly described. For example, the present selection system for investigation services here described has been implemented on the Internet, but other networks configurations could also be used to implement the present invention.  
20 The present embodiments are therefore, to be considered in all respects to be illustrative and not restrictive.



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**Claims**

1. A computerised method of enabling the selection of a service provider for performing a service; said method including:

(a) processing a service enquiry for a particular service;

5 (b) retrieving historical performance differential data associated with said service in respect of a plurality of service providers in response to said service enquiry;

(c) processing said historical performance differential data, to arrive at comparable performance differential data in respect of said plurality of service providers for enabling the selection of a service provider to perform the particular service;

10 (d) capturing performance differential data relating to the provision of the particular service by the selected service provider, and

(e) updating the historical performance differential data by incorporating said captured performance differential data.

15 2. A computerised method as claimed in claim 1 which includes repeating steps (a) to (e) to enable the selection of a service provider for the provision of subsequent services with the aid of updated performance differential data.

20 3. A computerised method as claimed in either claim 1 or claim 2 which includes compiling a performance differential dataset including historical performance differential data components associated with the provision of at least one previous service by each service provider.

4. A computerised method as claimed in any one of the preceding claims which further includes defining at least one performance expectation for the performance of the service, and monitoring this against actual performance.

25 5. A computerised method as claimed in any one of the preceding claims wherein the performance differential data includes data derived from both performance expectation data and actual performance data.

6. A computerised method as claimed in claim 5 that includes;

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processing said captured actual performance data and said performance expectation data to generate data indicative of the differential between the actual performance of past services and a corresponding performance expectation;

5 updating the historical performance differential data by incorporating said processed differential performance data.

7. A computerised method as claimed in claim 1 that includes

retrieving historical performance data relating to the actual performance of past jobs and associated performance expectation data for the past jobs in respect of a plurality of service providers in response to said service enquiry;

10 processing said data related to the actual performance of past jobs and corresponding performance expectation data to generate data indicative of the differential between the actual performance of past services and a corresponding performance expectation.

8. A computerised method as claimed in any one of the preceding claims wherein the historical performance differential data includes performance data relating to at least one of the following:

15 the cost of past services; the quality of past services, with the quality of past services including the timeliness of the provision of past services, the duration of past services, and the outcome of the past services.

20 9. A computerised method as claimed in any one of claims 1 to 8 wherein the comparable performance differential data in respect of each of the service providers is combined with least one of comparable cost data, and comparable quality data, to derive a comparable performance index for each service provider for enabling the selection of a service provider to perform the particular service, with the combination of the comparable cost data and comparable quality data and comparable performance differential data being arranged in accordance with

25 weightings reflecting the relative importance of the comparable cost data, comparable quality data and comparable performance differential data to the buyer.

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10. A computerised method according to any one of claims 5 to 8 wherein the at least one performance expectation for the performance the service is set at least in part by one or more of the following: a buyer; a chosen service provider, a third party.

5 11. A computerised method according to any one of claims 5 to 10 which includes:  
enabling at least one performance expectation for the service to be varied; and  
capturing as historical performance differential data, data relating to a variation in the at least one performance expectation for the service.

12. A computerised method according to claim 11 including enabling a procurer of the service to approve or deny variation to a performance expectation.

10 13. A computerised method according to claim 12 in which the procurer can deny variation to a performance expectation if the variation was foreseeable when an initial performance expectation was set.

14. A computerised method according to any one of claims 11 to 13 in which performance differential data is measured relative to a combination of the initial performance  
15 expectation value and one or more subsequent incremental changes to the performance expectation that were not foreseeable when the initial performance expectation was set.

15 15. A computerised method according to any one of claims 4 to 14 wherein setting the at least one performance expectation for the performance the service includes:

receiving a service plan from a chosen service provider, and

20 16. A computerised method according to claim 15 including, enabling the procurer to setting the at least one performance expectation for the performance of the service in accordance with the service plan if a procurer approves the service plan.

16 17. A computerised method according to claim 15 including, enabling the procurer to amend the service plan.

25 18. A computerised method of enabling the selection of a service provider for performing a service, said method including:

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(a) compiling historical actual performance data and corresponding performance expectation data associated with the provision of at least one previous service by a plurality of service providers.

5 (b) processing said actual performance data and performance expectation data to arrive at comparable performance differential data in respect of said service providers for enabling the selection of a service provider to perform the particular service;

(c) capturing actual performance data and performance expectation data relating to the provision of the particular service by the selected service provider; and

10 (d) updating the historical actual performance data and performance expectation data to incorporate said captured actual performance data and performance expectation data.

19. A computerised method as claimed in either one of claims 17 or 18 which includes setting an initial performance expectation.

20. A computerised method as claimed in claims 19 which includes enabling variation of the performance expectation during the performance of the job.

15 21. A computerised method as claimed in claims 20 in which a variation of the performance expectation during the performance is possible when the variation was not foreseeable when the initial performance expectation was set.

20 22. A computerised method as claimed in claim 21 in which the performance expectation data used to arrive at comparable performance differential data is derived from the initial performance expectation and one or more subsequent non-foreseeable variations to the performance expectation data.

23. A computer-readable medium having stored thereon executable instructions for causing a computer to perform a method of any one of the preceding claims 1 to 22.

25 24. A computer system to enable a buyer to select a service provider for performing a service, said system including:

an enquiry processing device configured to receive and process a service enquiry for a particular service from the buyer ;

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a database configured to store historical performance differential data associated with said service in respect of a plurality of service providers;

5 a processor carrying instructions to retrieve and process said historical performance differential data from said database in response to said query to arrive at comparable performance differential data in respect of said service providers for enabling the buyer to select a service provider, on the basis of said comparable performance differential data, to perform the particular service.

25. A computer system as claimed in claim 24 which includes:

10 a data capture component configured to capture actual performance data, and performance expectation data, relating to the provision of the particular service by the selected service provider, and updating means to update the historical performance differential data on the database with said captured performance data.

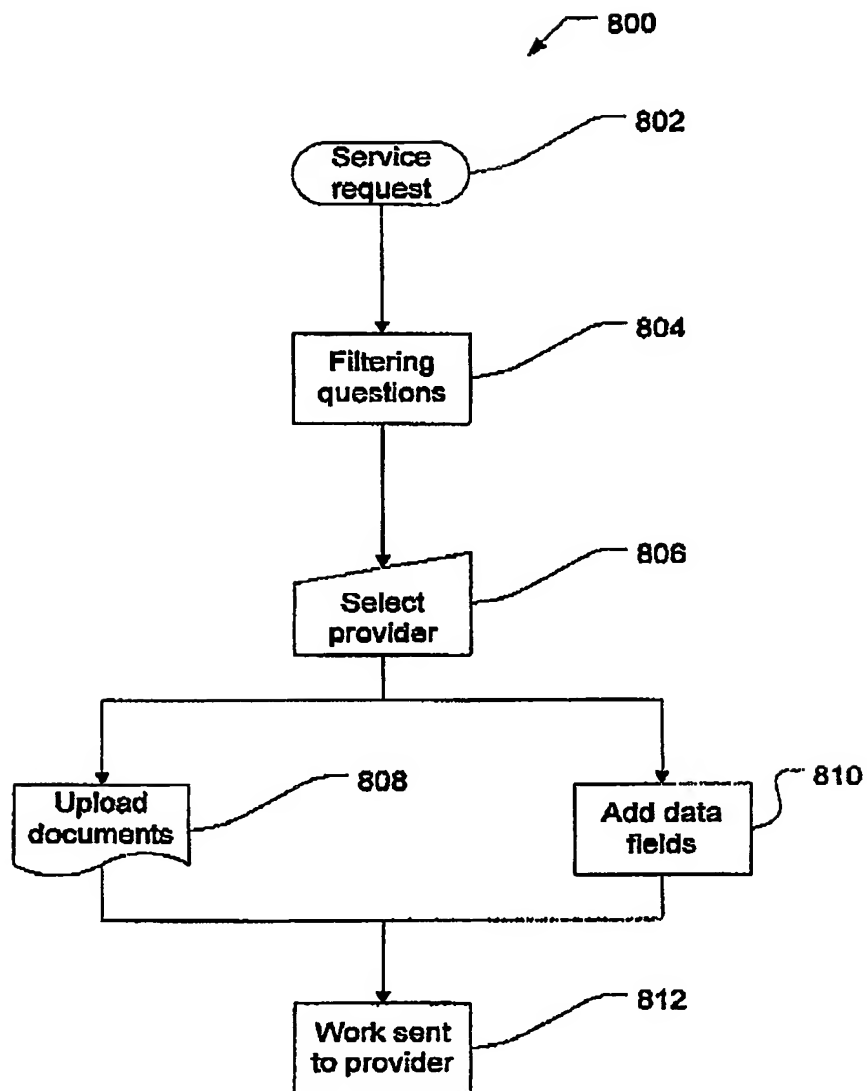
26. A computer system as claimed in either one of claims 24 or 25 in which the system further includes:

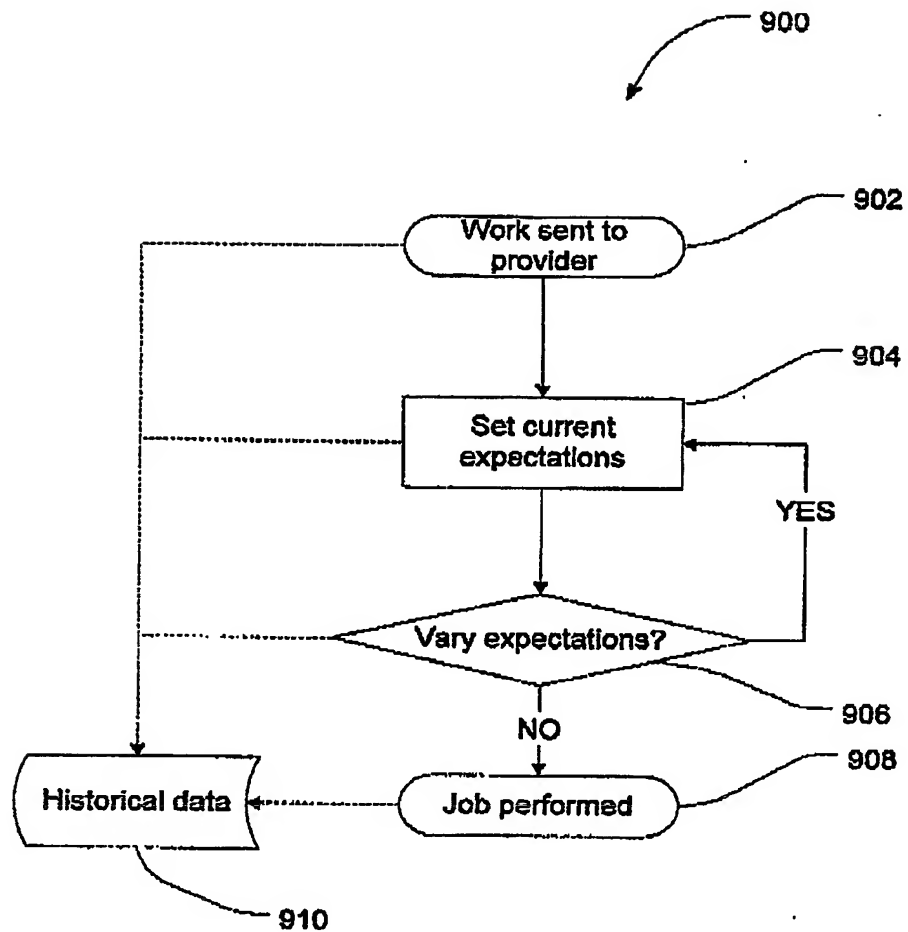
15 an expectation variation component configured to enable variation of performance expectation data associated with a service.

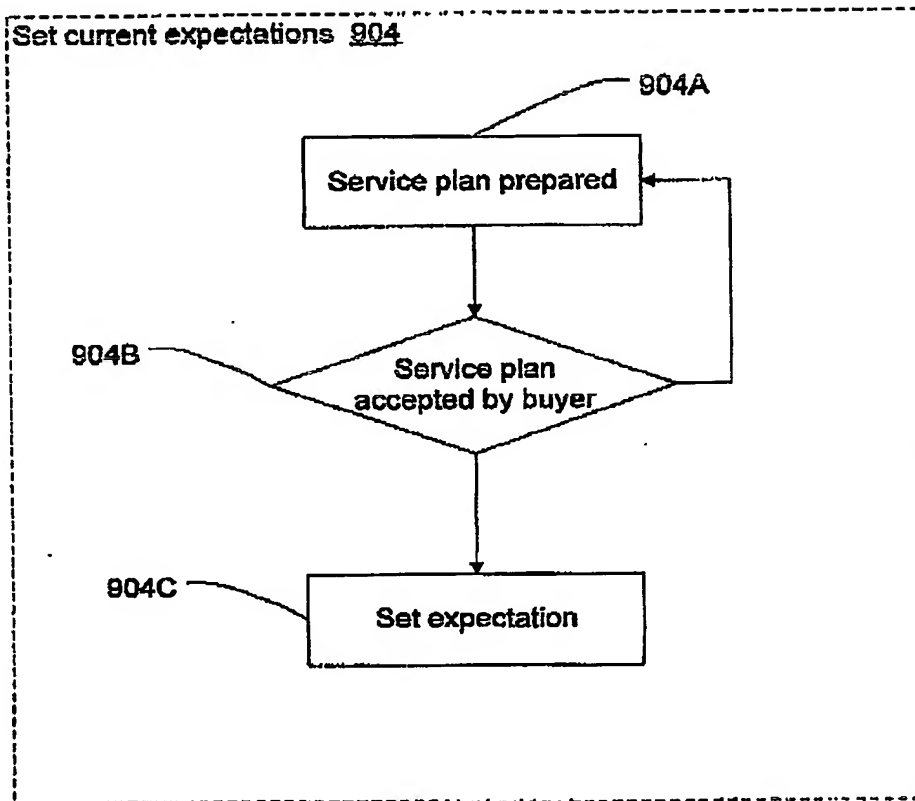
20 27. A computer system as claimed in any one of claims 24 to 26 wherein the processor is configured to derive a comparable performance index for each service provider by combining the comparable performance differential data, comparable cost data and comparable quality data in respect of each of the service providers, with the combination of the comparable performance differential data, the comparable cost data and comparable quality data being is performed in accordance with weightings reflecting the relative importance of the comparable performance differential data, the comparable cost data and comparable quality data to the buyer.

25 28. A computer system as claimed in claim 27 wherein the data capture component is further configured to capture varied performance expectation data relating to the provision of the particular service by the selected service provider.

29. A computer operating under the control of the computer readable medium of claim 23.

**FIG. 1**

**FIG. 2A**



**FIG. 2B**



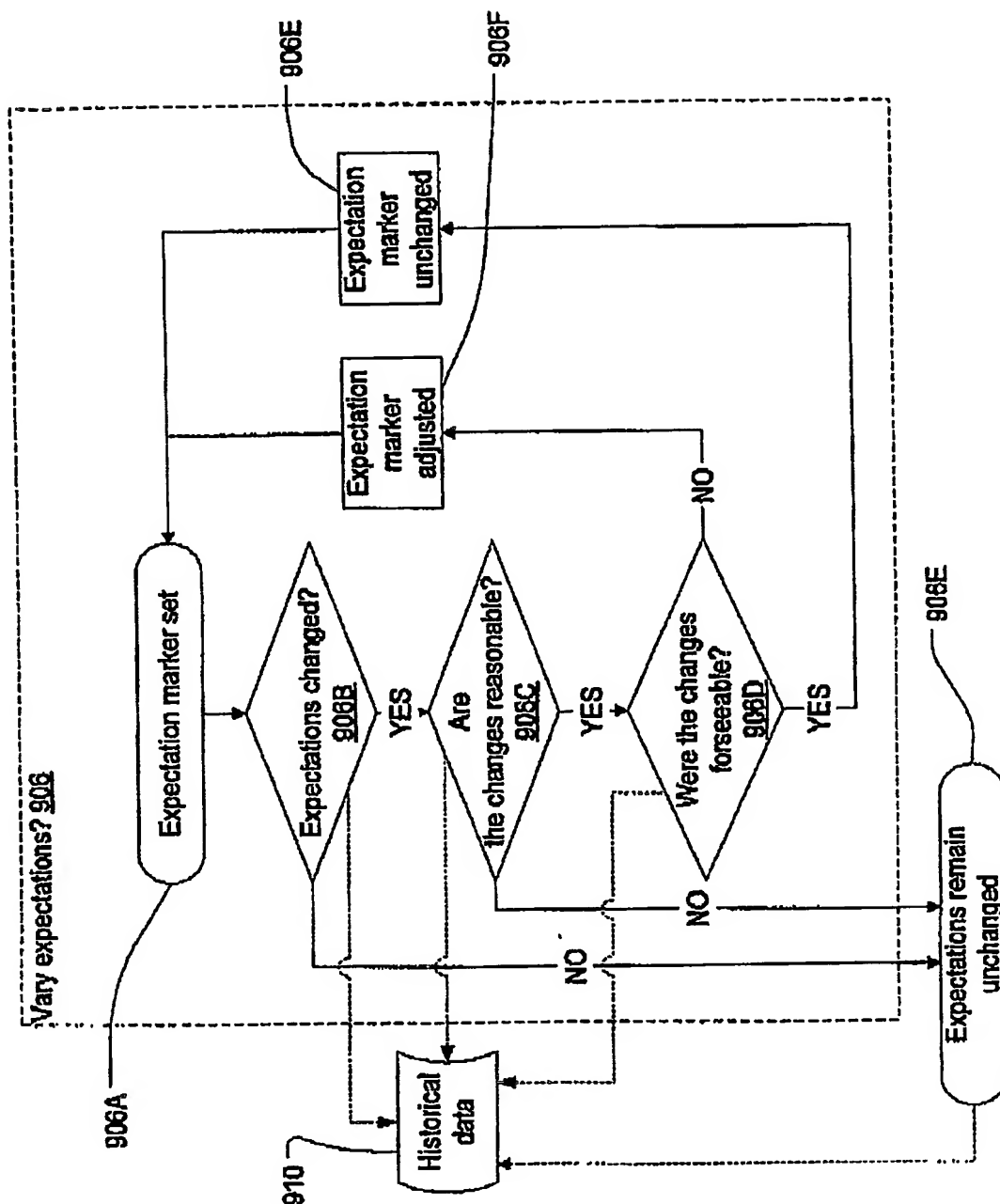
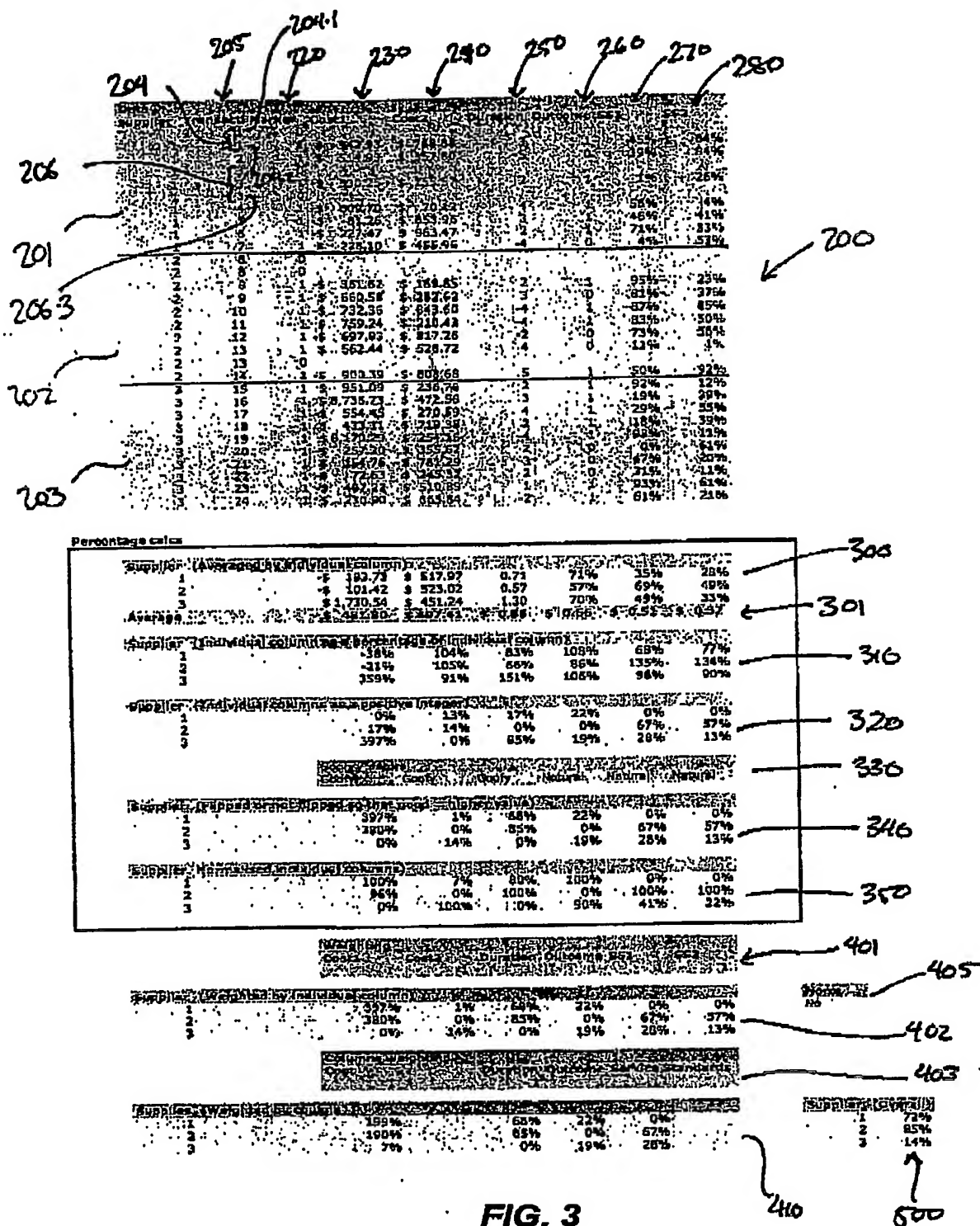


FIG. 2C



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